

WHAT IS CLAIMED IS:

1 1. A storage library comprising:
2 a frame;
3 a plurality of cells supported within the frame for holding media
4 elements; and
5 a module supported in the frame, the module having a housing and
6 a robot assembly operable for moving away from the housing in order to move
7 toward the cells and manipulate media elements supported by the cells, the module
8 further having a communications cable routed around a cable mechanism within the
9 housing, one end of the communications cable being connected with the robot
10 assembly for enabling communications with the robot assembly, the cable
11 mechanism being operable for enabling a portion of the communications cable to be
12 pulled out from cable mechanism as the robot assembly moves away from the
13 housing.

1 2. The library of claim 1 wherein:
2 the cable mechanism is further operable for preventing the pulled out
3 communications cable portion from being retracted back into the cable mechanism
4 after the robot assembly has moved out of the housing.

1 3. The library of claim 2 wherein:
2 the cable mechanism is further operable for enabling the pulled out
3 communications cable portion to be retracted back into the cable mechanism while
4 the robot assembly is in the housing.

1 4. The library of claim 3 wherein:
2 the cable mechanism enables the pulled out communications cable
3 portion to be manually retracted back into the cable mechanism while the robot
4 assembly is in the housing.

1 5. The library of claim 3 wherein:

2 the cable mechanism includes a tension spring assembly which is
3 configured to wedge the communications cable with a roller biased under a torque
4 load to prevent the pulled out communications cable portion from being retracted
5 back into the cable mechanism after the robot assembly has moved out of the
6 housing.

1 6. The library of claim 5 wherein:
2 the tension spring assembly is configured to pull away the roller from
3 the communications cable while the robot assembly is in the housing to enable the
4 pulled out communications cable portion to be retracted back into the cable
5 mechanism.

1 7. The library of claim 6 wherein:
2 the cable mechanism further includes a retraction handle assembly,
3 wherein the retraction handle assembly enables a user to manually retract the pulled
4 out communications cable portion back into the cable mechanism while the robot
5 assembly is in the housing.

1 8. The library of claim 1 wherein:
2 the module is removably supportable out of the frame when the robot
3 assembly is in the housing and the communications cable is retracted back into the
4 cable mechanism.

1 9. The library of claim 1 wherein:
2 the module is removably supportable into the frame when the robot
3 assembly is in the housing and the communications cable is retracted into the cable
4 mechanism.

1 10. The library of claim 1 wherein:
2 the robot assembly includes a platform and the end of the
3 communications cable connected to the robot assembly forms a loop around an
4 extension of the platform, wherein the platform extension applies a force on the

5 cable loop as the robot assembly moves away from the housing causing the portion
6 of the communications cable to be pulled out from the cable mechanism.

1 11. The library of claim 10 wherein:
2 the force applied by the platform extension on the cable loop is
3 caused by the weight of the platform as the robot assembly moves down and away
4 from the housing.

1 12. A robotics module for use with a storage library, the robotics
2 module comprising:
3 a housing;
4 a robot assembly containable within the housing, the robot assembly
5 operable for moving away from the housing;
6 a cable mechanism within the housing; and
7 a communications cable routed through the cable mechanism, the
8 communications cable having a first end connected to the robot assembly for
9 enabling communications with the robot assembly;
10 wherein the cable mechanism is operable for enabling a portion of the
11 communications cable to be pulled out from cable mechanism as the robot assembly
12 moves away from the housing.

1 13. The robotics module of claim 12 wherein:
2 the cable mechanism is further operable for preventing the pulled out
3 communications cable portion from being retracted back into the cable mechanism
4 after the robot assembly has moved out of the housing.

1 14. The robotics module of claim 13 wherein:
2 the cable mechanism is further operable for enabling the pulled out
3 communications cable portion to be retracted back into the cable mechanism while
4 the robot assembly is in the housing.

1 15. The robotics module of claim 14 wherein:

2 the cable mechanism includes a tension spring assembly which is
3 configured to wedge the communications cable with a roller biased under a torque
4 load to prevent the pulled out communications cable portion from being retracted
5 back into the cable mechanism after the robot assembly has moved out of the
6 housing.

1 16. The robotics module of claim 15 wherein:
2 the tension spring assembly is configured to pull away the roller from
3 the communications cable while the robot assembly is in the housing to enable the
4 pulled out communications cable portion to be retracted back into the cable
5 mechanism.

1 17. The robotics module of claim 16 wherein:
2 the cable mechanism further includes a retraction handle assembly,
3 wherein the retraction handle assembly enables a user to manually retract the pulled
4 out communications cable portion back into the cable mechanism while the robot
5 assembly is in the housing.

1 18. A cable mechanism for use with a communications cable
2 connected at one end to a robot assembly of a storage library, the cable mechanism
3 comprising:
4 a containment box;
5 a retraction handle assembly in the containment box, the retraction
6 handle assembly being operable for being contained between layers of the
7 communications cable; and
8 a tension spring assembly in the containment box and connected to
9 the containment box, the tension spring assembly being operable for enabling a
10 portion of the communications cable to be pulled out from retraction handle
11 assembly as the robot assembly moves away from the containment box.

1 19. The cable mechanism of claim 18 wherein:
2 the tension spring assembly is operable for wedging the
3 communications cable with a roller biased under a torque load against the

4 containment box to prevent the communications cable from being retracted back into
5 the retraction handle assembly while enabling the communications cable to be pulled
6 out from the retraction handle assembly.

1 20. The cable mechanism of claim 19 wherein:
2 the tension spring assembly is operable to pull the roller away from
3 the containment box against the torque load to enable the communications cable to
4 be retracted back into the retraction handle assembly when the robot assembly is
5 adjacent the containment box.

1 21. The cable mechanism of claim 20 wherein:
2 the retraction handle assembly enables a user to manually retract the
3 communications cable back into the retraction handle assembly when the roller has
4 been pulled away from the containment box.